

Daily GLOWBUGS

Digest: V1 #2

via AB4EL Web Digests @ SunSITE

Purpose: building and operating vacuum tube-based QRP rigs

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%%%% GlowBugs %%%%% GlowBugs %%%%% GlowBugs %%%%% GlowBugs %%%%%

Subject: glowbugs V1 #2

glowbugs

Wednesday, April 9 1997

Volume 01 : Number 002

Date: Tue, 08 Apr 1997 19:34:54 -0400

From: John Levreault <jlevro@shore.net>

Subject: Re: Toobs

At 12:38 PM 4/8/97 -0700, Bowman, Jim wrote:

>I just got a few oldies on trade, including a '01A in box, but I doubt
>if it is new. I also got a couple of 471-B toobs in boxes, but I can't
>seem to find them listed in my old 1939 radio handbook. The box has
>information printed on it as follows:

>

>471-B Power Amplifier

>Genuine Audion

>De Forest The Father of Radio

>De Forest Radio Co.

>Jersey City, N.J.

>

>Fil 5V

>A .25

>Plate 180

>(Maximum)

>

>It is a 4-pin toob.

>

I think this might be a 71A, a direct heated triode, much revered by audiophiles who can live with a mighty 800 milliwatts of power (sounds better that way). Manufacturers back in those days stuck extra numbers in front of a particular model to differentiate themselves.

>Does anyone have any info on pinouts?

pin 1 = filament

pin 2 = plate

pin 3 = grid

pin 4 = filament

>Suggestions for use?

It's an audio power amp triode. Puts out 790mw into a 4800 ohm load with a mu of 3, rp of 1700. Proper bias is $e_p=180$, $i_p = 20\text{ma}$, and $e_g = -40.5\text{V}$. Great for those high sensitivity horns you've got lying around. It's also supposed to make a good line level preamp.

>I suppose

>the pair could make a regen with 1 stage audio.

>

Yes, although the mu may be a bit too low for good sensitivity.

>Don'tcha just love this old stuff??

>

Yup! Interested in trading for other tubes?

73 de NB1I

John Levreault

Date: Tue, 8 Apr 1997 19:40:29 -0500 (CDT)

From: mjsilva@ix.netcom.com (michael silva)

Subject: Heising modulation (was Re: AM Modulators, etc)

Shane wrote:

>...may have discussed this circuit earlier, but it's worth a second
>mention, I think. It's a 25 Watt, 160 metre, 4 tube AM rig with
>Pi-output, crystal control, and simple construction.

>

>It uses two 6C5's (or 6J5's) as crystal oscillator and 1st stage
>audio, and two 6L6's as RF power amplifier stage and 2nd stage
>audio/modulator. B+ is 400VDC and 200VDC.

Sounds interesting. Where's it from?

>

> Most interesting is the modulation transformer. It isn't. It's a
> common 20H/150mA power supply filter choke.

Yep, this is Heising modulation. Both the audio modulator and the RF PA current flow thru the choke, and since the choke wants to keep the current thru it constant, as the audio tube current goes up the PA current goes down. Looks to me like the limitations are (a) The modulator must be class A, and (b) the voltage and current to the PA and modulator are the same, locking you into a modulator setpoint once you've picked your PA point, or vice-versa.

73,

Mike, KK6GM

Date: Tue, 8 Apr 1997 17:43:00 -0700
From: "Bowman, Jim" <Jim_Bowman@ATK.COM>
Subject: T11-A AIRCRAFT XMTR

Last night I got around to stripping some olde junque a la flea market for parts. One victim was a transmitter that looked very similar to an Arcusfivus in that the housing was made almost exactly by the same design. In fact, at a glance, I thought it was a shortened Arcusfivus chassis. Now, before the lynch mob is organized and heading my way, I hasten to add that the thing was much modified, in lousy shape, and was a VHF transmitter. It had 5 6AQ5's in it, making it more than worth the buck I paid for it. Someone had converted it to a 2 meter rig at some time, and had covered the original front panel with a "glamor panel" to cover original unused holes, etc. Anyway, when I removed the added panel, the original nameplate was still there. It apparently was a VHF aircraft transmitter, 28 volt, model T11-A. It had a mic jack on the front, and I bet it used a carbon mike. I took 2 round transformers out of it, and I wouldn't doubt that one may be a carbon mike transformer. Does anyone have any schematic or parts info on this item that may show the transformers?

Thanx and 73,
Jim W7HPK
Jim_Bowman@ATK.COM

Date: Tue, 8 Apr 1997 20:20:13 -0500
From: launerb@crl.com (William H. Launer)
Subject: Low power AM modulator

Glowbuggers,

I found a modulator design for the 6T9'r transmitter in ARRL "Hints and Kinks", 1978 edition. It uses a modulation transformer (the author used a Stancor A-2871), but is quite simple, and uses a second 6T9 tube. I scanned the schematic (it includes the 6T9'r circuit; if anyone is interested, let me know, and I'll send a .gif file to you.

73, Bill wb0cld

Bill Launer
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grp-1 #279 grp arc1 #3551
Grid Square EM48RT

Date: Tue, 8 Apr 1997 21:43:38 -0600 (MDT)
From: toyboat@freenet.edmonton.ab.ca
Subject: Re: Heising modulation (was Re: AM Modulators, etc)

On Tue, 8 Apr 1997, michael silva wrote:

> Shane wrote:

>

> >...may have discussed this circuit earlier, but it's worth a second
> >mention, I think. It's a 25 Watt, 160 metre, 4 tube AM rig with
> >Pi-output, crystal control, and simple construction.

> >

> >It uses two 6C5's (or 6J5's) as crystal oscillator and 1st stage
> >audio, and two 6L6's as RF power amplifier stage and 2nd stage
> >audio/modulator. B+ is 400VDC and 200VDC.

>

> Sounds interesting. Where's it from?

It's from (as I recall) a book by Brown and Kneitel, called "101
Ham Radio Projects".

> > Most interesting is the modulation transformer. It isn't. It's a
> > common 20H/150mA power supply filter choke.

>

> Yep, this is Heising modulation. Both the audio modulator and the RF
> PA current flow thru the choke,

That's the way it is on the schematic.

> and since the choke wants to keep the
> current thru it constant, as the audio tube current goes up the PA
> current goes down. Looks to me like the limitations are (a) The
> modulator must be class A, and (b) the voltage and current to the PA
> and modulator are the same, locking you into a modulator setpoint once
> you've picked your PA point, or vice-versa.

How well does it work, within these limitations?

> 73,

> Mike, KK6GM

Regards,

Shane Wilcox

~~~~~  
Shane <toyboat@freenet.edmonton.ab.ca>

~~~~~

Date: Tue, 8 Apr 1997 22:46:51 -0500 (EST)
From: "Roberta J. Barmore" <rbarmore@indy.net>
Subject: carbon mic input transformers?

Hi!

I've got to do a little checking, but there may be some nice "cheats"
for carbon mic-to-grid transformers. The basic spec is a couple hundred
ohms to oh, lots of K, and able to handle some DC current on the primary

side.

Seems to me that an old plate-to-speaker transformer has about the right ratio; we're pushing it way off design center, so response may suffer, but probably not significantly. A 6.3V heater transformer might do, too--ratio's a bit low but it's got a chance.

As time permits, I'll haul out the '76>P-P'42 bench amp (think 6C5 and push-pull 6F6s if you like newer tubes), some old iron, the carbon mic and a battery, and see what works. Could be there's an affordable & cheap way to go!

My thanks to the fellows who came up with the source articles on cathode modulators--darned if I know where I saw 'em, as the QST years mentioned don't seem to be in the files here!

...Quick PS: saw Dexter Francis had done an introduction to the list; do I need to do that, or do y'all know me from BA?

73,

--Bobbi

(Who never even *met* the Dixie Squinch Owl, so there)

Date: Tue, 8 Apr 1997 23:32:56 -0500
From: bill@skeeter.frco.com (William Hawkins)
Subject: Re: carbon mic input transformers?

The plate-to-speaker transformer run backwards works just fine. That's the way old intercom units worked - the talk/listen switch switched the transformer to grid for talking and plate for listen.

Ah, but you want it for a carbon mike, so it's got to handle DC in the speaker side. Well, if it doesn't work, try an automobile ignition coil. Handles DC, and has a _large_ turns ratio. Should have good high end response because a spark has a fast rise time.

Regards,
Bill Hawkins

Date: Wed, 9 Apr 1997 10:07:34 -0500 (CDT)
From: mjsilva@ix.netcom.com (michael silva)
Subject: Welcome Bobbi

Bobbi wrote:

>...Quick PS: saw Dexter Francis had done an introduction to the list;
>do I need to do that, or do y'all know me from BA?

Do introduce yourself Bobbi -- there are plenty of new folks on the GB list. For those on the list, Bobbi cemented my return to the mysterious (to the rest of the population) world of the vacuum tube a year or two ago when she sent me some receiver schematics from pre-war E&E Handbooks. I hope we can talk her into posting here often, since her comments always provide plenty of chuckles *and* information. BTW,

Bobbi, my wife *still* doesn't understand why I want to read those
smelly old books in bed...

73,
Mike, KK6GM

Date: Wed, 09 Apr 1997 11:47:31 -0500
From: Conard Murray <ws4s@InfoAve.Net>
Subject: 228 and growing...

Hi All,
The new GB list is at 228 and growing. We are still working on getting the
digest mode working. I have a list of those that have indicated to me that
they wished to be placed in digest mode as soon as it was available.
Everyone pull up a chair and introduce yourself and let's get going.
73,
Conard

- - - - -
Conard Murray WS4S Glowbugs listowner ws4s@infoave.net
217 Dyer Avenue Cookeville, TN 38501 615-526-4093
Member Arizona ScQRPions QRP-L #993 Friend to anything TCS or GRC-19
<>< Wise men still seek Him ><>
WIMPS: Qs=000 30m=0 17m=0 12m=0 States=00/00/00

End of glowbugs V1 #2

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Created by **Steve Modena, AB4EL**
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